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BY STEPHANIE OVERBY

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Tim Golden

RESIDENT CHIEF TECHNOLOGY OFFICER FOR THE AMERICAS INDUSTRY STANDARD SERVER BUSINESS AT HEWLETT-PACKARD

In this role, he acts as the primary liaison between HP's customers and its ProLiant platform development teams. With 30 years of industry experience at HP, Compaq, Dell, and Apple, Tim brings a comprehensive and thorough understanding of technology trends and emerging product opportunities and has developed a unique ability to convey complex technical advantages into practical business benefits.

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Autonomics in IT

Next-Gen Servers Stress Intelligence and Automation

Hewlett-Packard has been assessing what trends like virtualization and cloud computing mean to its customers. We spoke with HP executive Tim Golden about the demands such trends place on application servers, and how HP has embedded intelligence and increased automation in its next-generation platforms in response.

What types of manual IT tasks can be automated?

Servers need to be more innovative, more intelligent and more self-sufficient given that 51 percent of server outages are linked to human intervention or error. For instance, what if we could, through clever engineering, fix problems that servers or server administrators might otherwise trip up on? One example involves monitoring for multi-bit errors in memory. If we can identify a 2-bit memory error we can automatically fix it

compared to previous-generation servers.

When looking to reduce energy costs, is it practical to consider higher-performance servers?

It makes perfect sense. With the new-generation platforms running the newest advanced processors, we're seeing performance gains upwards of 50 to 200 percent depending on the workloads. And thanks to the energy-saving techniques we've implemented, we're delivering as much as 70 percent more compute per watt than even our last generation, which was a quantum leap over earlier generations.

Doesn't the increased complexity make next-gen servers more difficult to service?

No; we've introduced many features to make them easier and faster to service. We've also done many things to make them more reliable. That includes equipping servers with

We're seeing 6 times performance gains compared to previous-generation servers.

on the fly without interruption of service. Another example is an LED light scheme on the hard-disk drive carrier that is designed to not only convey general health status, but also visually identify and isolate failed drives from good drives within RAID sets. That eliminates another relatively common human error.

How can server performance improve to meet the demands of enterprise applications, virtualization, and cloud computing?

One way is by addressing the imbalance that exists between processors, memory and storage. Over the last five to six years, storage performance hasn't kept pace with the performance advances we've seen in multicore processors and in DDR memory. One example of how we've addressed this performance gap is by fine-tuning the algorithms associated with solid-state drives and our new Smart Array controllers. Through such methods, we're seeing 6 times performance gains

an Active Health System that monitors 1,600 different health and configuration parameters 24 hours per day, 365 days per year. That information is stored for one year, and can be used to recover much faster from any problems that do occur. Product engineers can also build more reliable servers by looking at the correlation between component failures and configuration data.

It sounds as though HP committed significant resources to creating the ProLiant Gen8 portfolio.

It was a 2.5-year development effort, with a \$300 million budget. We now have some 917 patents that are either granted or pending related to Gen8 and its immediate infrastructure. There are no fewer than 150 unique features on Gen8 servers that didn't exist in our previous generation. If that doesn't address escalating server demands, I don't know what will. ■

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**David Grimes**

CHIEF TECHNOLOGY OFFICER

David Grimes is an innovative technology visionary responsible for the strategic direction of the company's architecture and solutions. He has been instrumental in leading both the design and development of the NaviCloud platform. A leader focused on continuous process improvement through new and enabling technologies, David frequently meets with customer's to gain market knowledge, evangelize NaviSite's vision and develop solutions.

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Road Ahead for Cloud Paved with Hybrid Applications

Forrester Research claims the cloud market will reach a quarter of a trillion dollars by 2020. Why all the interest in cloud?

Taking away the hype and the buzz over the past few years, the interest is due to cloud being the natural evolution of hosted and managed services. This virtualization enables capabilities above and beyond those of a single-tenant or traditional hosting model. Additionally, applications themselves are becoming increasingly cloud-aware, and they will continue to evolve in order to leverage

cloud security consideration, think of it as an opportunity for cloud-based services to address.

What do you mean when you talk about hybrid applications?

In the industry, hybrid describes an approach to computing that combines public and private clouds, as well as hosted and on-premise capabilities. I define hybrid as a solution that ultimately combines cloud infrastructure with traditional, single-tenant

Ultimately, we believe the migration to the cloud may not be as immediate for all organizations for a variety of reasons. We at NaviSite recognize that cloud is not a one-size-fits-all solution, so we embrace that fact.

the capabilities brought about by virtualization. This means we will be able to reach levels of performance and resilience traditional (service delivery) models cannot.

What are the core elements of cloud's value proposition for business?

In the earlier days of cloud computing, ROI was certainly one of the biggest value propositions; however, that is not the case today. Today, it is probably agility and elasticity. With cloud, companies can leverage the infrastructure and service-type offerings, enabling them to not only react faster but also more efficiently to increases in demand. This is the biggest driver of cloud for business.

In your view, are cloud security concerns well-founded?

Security, ultimately, should be a top concern in any deployment. Cloud neither exacerbates security concerns, nor is it an exception. The prevalence of BYOD (Bring Your Own Device) brings additional twists and turns to the overall cloud security picture. However, BYOD security is really endpoint security, which traditionally is the hardest to manage. Rather than treat BYOD as a

hosted infrastructure. Hybrid enables you to look at an entire application holistically, and to look at the needs of each layer of the application stack. So while you will encounter the same challenges in hybrid computing as you would in any computing scenario, I like to think of hybrid as an environment in which to respond better to those challenges.

What is NaviSite's approach to enabling hybrid applications?

Ultimately, we believe the migration to the cloud may not be as immediate for all organizations for a variety of reasons. We at NaviSite recognize that cloud is not a one-size-fits-all solution, so we embrace that fact. By combining best-of-breed technologies, including VMware virtualization technologies, we create efficient, secure hybrid solutions.

Our philosophy at NaviSite is a pragmatic one. We realize there will always be a certain amount of traditional, single-tenant hosted infrastructure in play. So we need to be able to offer a suite of services that combines best-of-breed cloud and best-of-breed single-tenant hosting to deliver complete solutions to our customers. ■

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Rob Duchscher, CIO at Starkey Industries, likes the "much tighter interaction" he gets working with startup vendors.

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COVER STORY Partnering with no-name vendors can lead to a big payoff or a total bust

BY STEPHANIE OVERBY





FROM THE
EDITOR IN CHIEF

start

CHATTER

Startup Mentors

Working with technology startups has long been a part of every CIO's job, but the relative importance of that work waxes and wanes with market forces. When the pace of tech change is predictable and the biggest vendors call all the shots, why wander out on a limb with some no-name, bleeding-edge newbie?

Then everything changes again, as it has in today's new era of mobility, cloud and consumer technologies. Suddenly, those slow-moving legacy vendors can't help your business keep up, let alone get ahead of competitors.

"A lot of startups are not only solving the newest problems out there," says CIO Ben Haines of Pabst Brewing, "they're solving them at a faster rate." Haines is one of the CIOs featured in our cover story ("Gambling on Startups," Page 20), which examines the good, the bad and the occasionally ugly outcomes of this risky business of relying on startups.

The upsides can be considerable. Reasonable pricing. Simpler contracts. Faster implementation. Greater influence over product design. Access to leading-edge technology that delivers a competitive edge.

"Startups are a good way to experiment at the edges of your priorities and position your company as an innovator," says William Hsu, co-founder of startup accelerator MuckerLabs.

"A lot of my peers are too risk-averse. They want to make the absolute safest choice," adds Rob Duchscher, CIO of Starkey Industries. "Safe choices lead to a culture of status quo. And status quo, especially today, can make it hard to survive and remain profitable."

Yet the downsides can be daunting. Shaky financials. Lousy customer support. Integration nightmares. Dysfunctional leadership teams. Technology that can't scale to handle enterprise needs.

"It takes time and direct involvement," says CIO Tracey Rothenberger of Ricoh. "But if you're truly getting a unique value proposition that you can't get elsewhere, you have to be willing to invest in this stuff."

That time-and-attention factor is perhaps the most significant piece of the startup puzzle. CIOs who do the best job of managing vendors will tell you they spend 20-30 percent of their time nurturing these partnerships, especially when new ventures are part of the mix.

If you haven't mentored any startups lately, our story may inspire you to get back in the game.

Maryfran Johnson, Editor in Chief, *CIO Magazine & Events*
mfjohnson@cio.com

NFC Around the World

When people think of near-field communications (NFC), they usually think of **mobile payments**. But Senior Online Editor Al Sacco says NFC can do a lot more than that. It's already being used for **device-to-device sharing** on phones such as the Samsung Galaxy S III. RIM will be equipping some Blackberrys with **access-card technology**, which allows phones to be used to unlock doors with a tap. And France is using NFC to turn mobile devices into **train tickets**. www.cio.com/article/713618

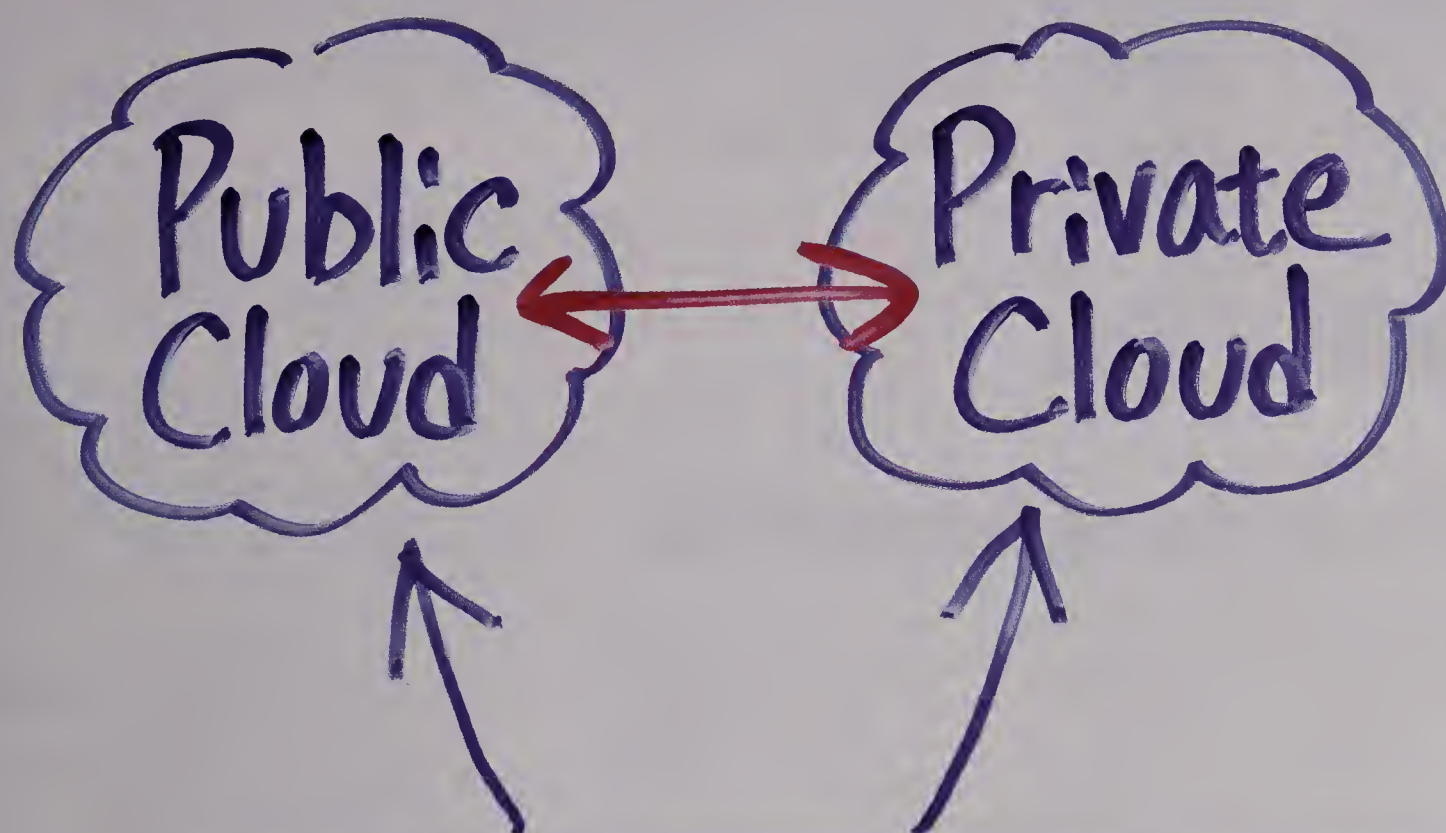
Why Testing Pays Off

Within the first half hour of trading on August 1, Knight Capital had a big problem: the **code for the algorithm** that bought and sold massive amounts of stock **malfunctioned**. Contributing Writer Matthew Heusser talked with a technologist who says the problem could've been caused by **a rush to production without proper testing**. Heusser found that to avoid risk, companies need to improve change and configuration management and production monitoring. www.cio.com/article/713628

Marketing Microsoft

When Microsoft bought Yammer, it had at least as much interest in Yammer's **marketing model** as in its big presence in the **enterprise social networking** market. Yammer's tools will be integrated into Microsoft's products, which Contributing Writer Paul Rubens says feeds the company's desire to master the **freemium software model** and learn how to **virally attract customers**. Analysts expect Yammer to be included in products like SharePoint and Office365, but it's hard to be sure, since Microsoft-owned Skype has yet to be integrated. www.cio.com/article/712799

Compiled by Editorial Assistant Lauren Brousell. Have a comment about a story in this issue? Go to www.cio.com/issue/20120915 or write to letters@cio.com.



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FROM THE PUBLISHER EMERITUS

Teachers Wanted

In my last letter, I discussed how over the past decade, international science and math assessment tests have continually shown American students falling further and further behind their peers in other countries.

And now everyone from *New York Times* columnist Thomas Friedman to both presidential candidates are making science, technology, engineering and math (STEM) education a strategic priority.

Many CIOs have also made it a priority. They regularly tell me that the public school system is not producing future workers with the collaboration, critical analysis and communication skills businesses need to effectively compete in today's economy.

So what should American policy-makers do? We already invest \$583 billion a year, or about \$10,500 for every one of the 49 million students enrolled in K-12 public schools. The United States invests more in public education than any other country.

The main finding of the "Closing the Talent Gap" report from McKinsey and Company is that quality teachers matter most. (You can read the report online at: <http://mckinseysociety.com/closing-the-talent-gap>.) The top-performing countries in math and science assessment tests, like Finland and Singapore, have made it a national priority to hire teachers—particularly elementary school teachers—from the top 30 percent of college graduates. Some only hire from the top five percent.

What do we do in the United States? We typically hire teachers from the bottom third of college graduates. Why? The starting pay for K-12 teachers can't compete with the lure of private-sector salaries.

The report concludes that in order for U.S. schools to improve down the road, our nation must start hiring new teachers from the top third of college graduates. If CIOs reading this agree with that finding, are they also willing to endure some hiring pain now if it yields more competent workers in the future? Because a strategic national policy that strongly promotes steering the best of our college graduates into teaching careers means that those graduates would no longer be headed for careers with your company.

There are other questions. Chiefly: How we would fund such a change in teacher hiring given current economic conditions? Even McKinsey's report admits this strategy would not be inexpensive.

Have you read this report? Email me your reaction.

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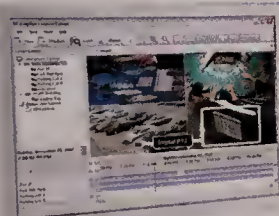
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Nationwide Overhauls Business Processes

UNITED KINGDOM The Nationwide Building Society is undergoing a £1 billion (\$1.56 billion) transformation of its business processes and the technology that supports them. The financial services company's COO, Tony Prestedge, says that includes over £100 million spent on a new mortgage-origination platform that gets applicants a decision more quickly, with a similar amount spent on upgrading Nationwide's payments platform to give more customers access to transfers.

"It's about bringing to life the idea of real-time banking where customers can say goodbye to having to wait three working days for a check to clear," Prestedge says. Meanwhile, last October, Nationwide launched a new Internet bank built in .Net, with the intention of developing common platforms for all front-office transactions, whether they're conducted online, on the phone or over the counter at one of the company's 700 branches. www.cio.co.uk

Aviation Authority Improves IT for Management

FRANCE The French Civil Aviation Authority is rethinking IT with an eye toward providing better support for management. To that end, it's setting up a new IT support center reporting to secretary-general Francis Massé. He says that the authority historically gave a higher priority to technical functions related to air safety, at the expense of IT used by management. The just-created department has put in new financial and HR information systems and is working on an intranet portal with applications, information and communication functions, as well as virtual communities. The new department will have to justify its continuing existence by finding the right skills and successfully changing the culture of IT usage at the authority, Massé says. www.cio-online.com

iPad App Facilitates Sales

GERMANY Thanks to a proprietary mobile app, sales reps for healthcare company Stada AG's subsidiary Hemopharm now only need to bring an iPad when they visit pharmacy accounts. Reps can pull up sales call information from the SAP CRM system, give product presentations and take orders directly on the tablet. The software was developed by corporate IT, says group CIO Angela Weissenberger, working closely with Hemopharm's sales and marketing people. www.cio.de

Grocer Sees Success with Tests of Mobile Payment Systems

SWEDEN Axfood has been testing two different mobile payment systems, running trials in four stores over the summer. The goals, according to CIO Jan Lindmark, are to evaluate the technical solutions and capture customer reaction. Both are smartphone apps for iOS and Android. Lindmark reports positive feedback from staff and customers thus far and no support calls. Next stability, speed and ease of use will be scrutinized to ensure mobile payments systems won't cause lines to back up. Axfood does have some limitations to contend with. Customers can't make partial payments with cash or a credit card, for example. In addition, returns have to be cash-only because funds can't be transferred back electronically. "If everything works well, we'll just hit the button and roll it out to the other stores," Lindmark says. cio.idg.se

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Tablets Take Flight

American Airlines seeks to send customer loyalty sky-high with mobile devices for crew members **BY KIM S. NASH**

It's hard to imagine employees and customers getting closer than they do in the aisles of an airplane, but American Airlines wants to get them even closer. Digitally, anyway.

The airline is testing a mobile system that provides flight attendants more passenger details with a goal of improving customer relations. Using Samsung devices, the pilot program has 40 of American's 10,000 flight attendants tapping and scrolling through data such as seat assignments, requests for special services, and a customer's loyalty program status and itinerary.

"The most time a customer spends with any employee is on the flight. Traditionally, we haven't done a great job of equipping flight attendants with info about who's on the plane," says CIO Maya Leibman. "If our [corporate] objective is to be a more customer-centric airline, we have to think about how are we helping employees to have meaningful interactions with those customers."

Mobile technology can help companies create intimacy with customers, says Eric Openshaw, who leads the U.S. technology, media and telecommunications practice at Deloitte. Openshaw ►►►

....**40%** Adults who don't always update software when prompted to do so. Skype**28%** Business travelers who are satisfied with in-flight Wi-Fi. FlightView**76%** Adults who say in-car technology is too distracting. Harris Interactive

►► **Mobile** Continued from Page 11

declines to talk about American specifically but notes that in general, mobile technology can help differentiate a company from its competitors. More personalized service can create a better customer experience, he says.

At American, mobility is a revolution, Leibman says. Other mobile applications now in use include a system for mechanics working on planes at airport terminals and one to let on-board crew report maintenance issues electronically. The flight attendant application, meanwhile, has been in testing since early spring and so far has made pre-flight activities go faster, which leads to more on-time departures, Leibman says.

The system will also build customer satisfaction and loyalty, she predicts, as flight attendants gain better insight into customer needs. American, which is reorganizing under Chapter 11 bankruptcy protection, has announced plans to save \$2 billion and produce \$1 billion in new revenue annually. This project contributes to both of those corporate financial goals, Leibman says.

Only United, which is still working to integrate Continental after its 2010 acquisition, ranks worse in customer satisfaction than American among the eight airlines rated by the American Customer Satisfaction Index. Leibman, who assumed the CIO role in January after leading the AAdvantage loyalty program for a year, plans to infuse IT projects with customer service knowledge to help improve the airline's reputation.

American tested multiple Samsung devices, which are Android-based, and plans to use the Galaxy Note, with its 5-inch screen, partly because it can easily fit into the pocket of the apron many flight attendants wear, Leibman says.

Leibman wants to take the flight attendant system into production, but first she has to work out device policies, she says. Whether flight attendants will be allowed to download personal apps, for example, and what will happen if the devices are lost or stolen are questions yet to be answered.

Senior Editor Kim S. Nash can be reached at knash@cio.com. Follow her on Twitter: twitter.com/knash99.

Information creates more "meaningful interactions" with travelers.

—Maya Leibman, CIO,
American Airlines

crunch

'Smartphone on Aisle Six!'

Using mobile technology is so common during shopping that some consumers write reviews while still in the store

Most common in-store uses of smartphones:



Price comparisons

55%

Scanning a QR code

34%

Writing a review

9%

SOURCE: EMPATHICA SURVEY OF 6,500 U.S. CONSUMERS, JULY 2012

Credit Cards Get Makeover

A new industry group will guide a massive upgrade of the U.S. payment card system to switch to cards that use an embedded microchip designed to prevent fraud.

The so-called EMV chip cards—EMV stands for Europay, MasterCard and Visa—are destined to replace the magnetic-stripe cards commonly used in the United States.

The new EMV Migration Forum will coordinate industry efforts to enable the U.S. payment card system to accommodate EMV cards, which are already deployed throughout Europe and in other parts of the world.

The forum is expected to last for at least three years, until consumers, merchants, card issuers and payment processors have mostly migrated to EMV, which is expected to happen around 2015.

EMV payment cards contain a microchip with advanced cryptographic capabilities that are used to authenticate a transaction with banks' back-end systems. Transactions are authorized after a consumer enters a PIN.

The transition to EMV is daunting: Payment terminals must be replaced, EMV payment cards must be issued to customers and ATMs need hardware and software upgrades, for example.

—Jeremy Kirk

..... **3 Billion** Firefox browser add-ons downloaded to date. Mozilla **7%** Children age 4 and under who have Facebook pages. Bonnier **64%** Users who want websites to load on their smartphones within 4 seconds. Keynote

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Chris Trimble,
adjunct professor of
business administration,
Dartmouth College



Innovation Starts Far From Home

Author says getting fresh ideas from emerging economies could provide a competitive advantage BY KIM S. NASH

In his reverse innovation theory, Chris Trimble, an adjunct professor of business administration at Dartmouth College, asserts that companies should target customers in emerging economies to gain competitive advantage in the "rich world." Trimble is co-author, with Vijay Govindarajan, of Reverse Innovation: Create Far from Home, Win Everywhere.

What is reverse innovation?

Any innovation that is adopted first in the developing world. Today, almost all innovations are adopted first in the rich world and only later flow to emerging economies. At most, they make minor customizations for other countries. That worked well enough when two-thirds of the world's economic growth was *not* in the developing world. But it's not good enough anymore. The needs of customers in emerging markets are far different than those of customers in the rich world.

Why are the needs different?

One example: Although China has the number two economy in the world, most people in China are peasants. There's no way the same products will work in the United States and in China. Corporations have to learn a new trick.

What's the trick?

Getting your mind around how different the needs of customers in emerging markets are. If you fly to India tomorrow, you land with rich-world blinders on. You see what is familiar and overlook what is unfamiliar.

John Deere wanted to develop a tractor customized to the needs of farmers in India. They sent a team to India for two weeks to learn the market and then go back to Iowa to build. Two weeks! They didn't actually understand the market. The second time, they sent a team to do research for two years. They took their tractor apart, laid out all pieces on the table. They did the same with a local tractor that was doing better than theirs in the market.

Then they built a new tractor from the ground up, based on what they learned Indian customers value.

Is innovating for the developing world a competitive advantage?

Not at first. At first, when you figure out a breakthrough way to produce a product or a service at drastically reduced cost, you're usually making major sacrifices in quality that the rich world won't buy. But you won't be stuck there forever. Technology improves over time. While that offering you develop in

India for India may not be attractive to the rich world when it's launched, five years later, when quality is there, it's very compelling.

The stakes are really, really high because innovations targeted to the developing world can flow uphill.

How can IT help?

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Contact Senior Editor Kim S. Nash at knash@cio.com. Follow her on Twitter: twitter.com/knash99.

CIOs can
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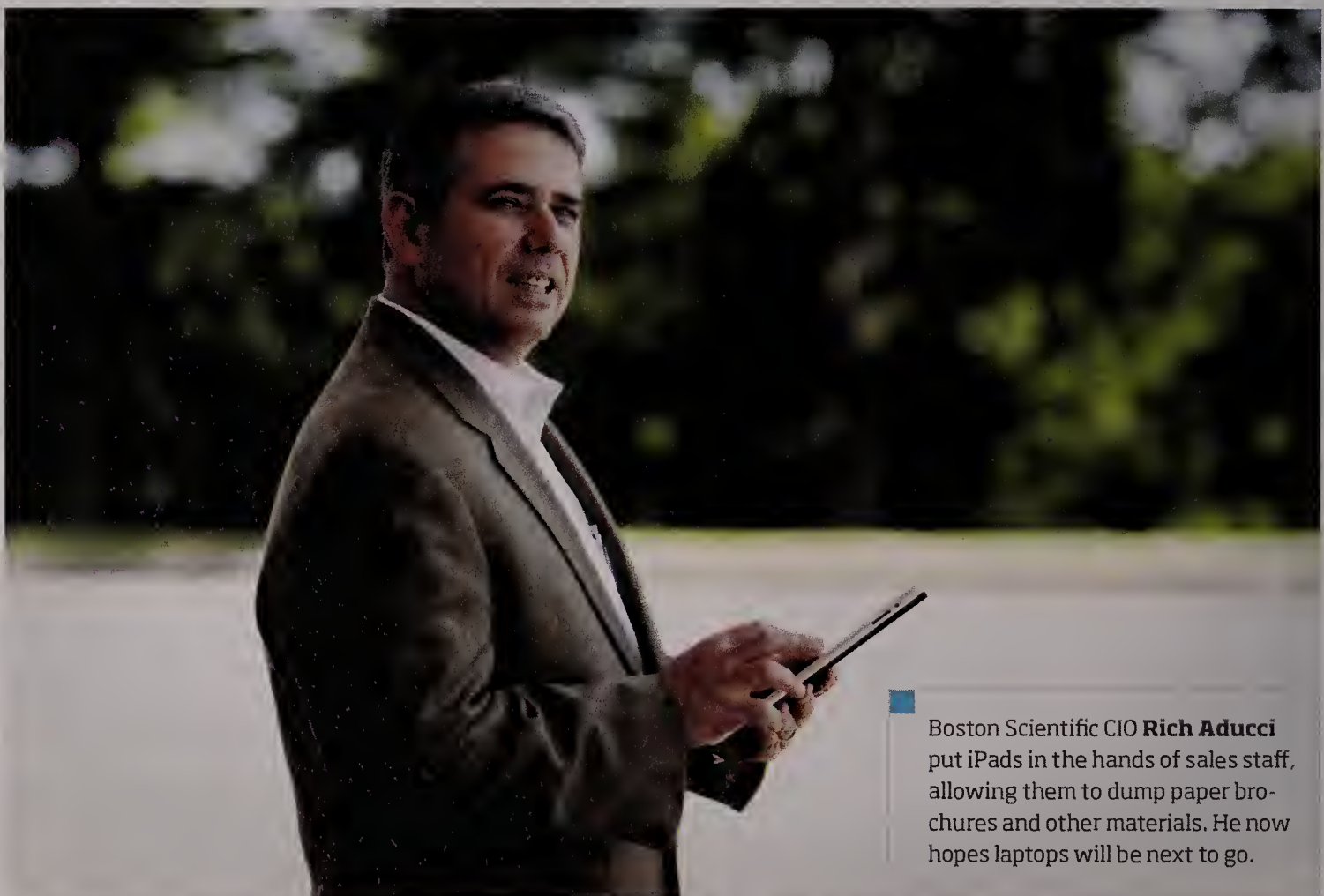
iPads were an easy choice, but cloud services for tablets can pose a problem **BY MICHAEL YBARRA**

When he rolled out iPads to the field sales force at Boston Scientific, a large medical device maker, CIO Rich Adduci suspected the strategy was a winner. The tablets would replace mounds of brochures and supporting material that sales staff had to lug to meetings with busy doctors.

But even Adduci was surprised when the iPad turned out to be one of the hottest topics at the company's annual sales meeting, inspiring impromptu gatherings of salespeople swapping tips.

"The adoption rate is like nothing we've seen before," Adduci says. "It was immediately clear it was a home run." The project later won a 2012 CIO 100 award for innovation.

Boston Scientific was a very early adopter of iPads—Adduci sent someone to wait in line at an Apple store to buy a dozen when the device first launched—putting it in the corporate vanguard. When Morgan Stanley surveyed 50 CIOs in January, for example, it found that 21 percent ▶▶



Boston Scientific CIO **Rich Adduci** put iPads in the hands of sales staff, allowing them to dump paper brochures and other materials. He now hopes laptops will be next to go.

The Verizon logo, featuring a red checkmark above the word "verizon" in a sans-serif font, is positioned in the top right corner of the advertisement.

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of companies currently purchase tablets for employees, and 51 percent were expecting to do so this year.

The company distributed the tablets to its sales force in two phrases in 2011: first to U.S. staff, then to international workers. Today, 5,300 devices are deployed and close to 100 custom apps—which run functions such as product simulations and component comparison tools—have been developed. New product launches now come with an iPad component to support the field sales team.

“By the end of this year or early next, our reps will no longer need their laptops,” says Adduci. “The last wave will be looking at fully exploiting capabilities such as geo-positioning. We’re in the thick of that now.”

Boston Scientific, which had \$7.62 billion in revenue last year, makes a range of devices, including pacemakers and spinal cord stimulators, and employs 25,000 people worldwide. It’s a complex business involving reams of data, but Adduci says the iPad has greatly simplified the task of sharing all that information with doctors.

“It’s not always easy to understand our therapies and how they work,” Adduci says. “It used to be quite cumbersome and difficult to explain. Juggling everything on a poor doctor’s desk was really difficult.”

Even less easy, Adduci says, is finding a cloud service that fulfills Boston Scientific’s enterprise needs and is also secure, reliable and affordable. The company would ultimately like a cloud-based way to share files and facilitate Web-, audio- and videoconferencing.

“If you’re a global enterprise, finding a cloud service that provides all of that is not really on the market yet,” he says. “You hope instead to get a partial solution that will work in some situations.”

Adduci says the company plans to implement some cloud services this year after exploring many, including WebEx, AT&T and Dropbox. “Our conclusion is there isn’t really an answer that solves all our needs.”

Moving key enterprise systems such as time and expenses and patient registration tools onto iPads has also been challenging. But Adduci says IT quickly decided not to create a virtualized desktop for the tablets.

“Rendering a PC on a iPad is not a great idea,” he says. “Technically, it’s possible. But what you can do is so different. We went to the iPad because the experience is so good. Why would I want to ruin a great experience?”

The upside of the company’s iPad adoption was instantly clear, Adduci says, even if finding a concrete ROI is difficult. Sales productivity shot up, while the need for printed material declined dramatically. And there were intangible benefits, such as improved morale and reinforcing the company’s innovative image.

The late Michael Ybarra was a freelance writer based in California.

Things You Need to Know

CUSTOMER EXPERIENCE

1 ENGAGE YOUR CUSTOMERS. Bruce Temkin, managing partner of the Temkin Group, a customer experience (CX) research and consulting company, says companies need to reach out to customers through varied channels: “Listen in on calls, read feedback from surveys, and learn how to integrate this into the development of IT,” he says. AT&T did this when it revamped its CX in retail stores. “We had customers provide direct feedback about the technology,” says CIO Thaddeus Arroyo, whose team also learned from videos of customers interacting with sales reps.

2 HIRE KEY PLAYERS. Temkin says more companies are adding a chief experience officer to head up CX initiatives. “It’s an important executive for the CIO to partner with,” he says. And CX should affect other hiring decisions too. “CIOs need to have more key players focused on understanding how customers interact with the business,” he says. Kyle McNabb, VP and practice leader at Forrester Research, adds that this talent should be in-house. “If they’ve relied on outsourcing, they need to bring it back.” He also says it’s worthwhile to train business analysts to be process- and customer-centric.

3 DO MORE WITH ANALYTICS. Ideally, you’ll know your customer so well that you can predict what they’ll do next. “With predictive analytics, we can understand across 100 different elements why customers give [satisfaction] scores,” says Temkin. Companies need to be present where customers are, including on social media. Dell, for example, has added 3,500 social media employees to handle the 25,000 comments it gets per day. Temkin says it’s crucial to analyze this data and get back to customers through social media channels.

4 KEEP TECHNOLOGY SIMPLE. Temkin says complex technology can hurt your CX strategy and be a major turnoff. “If you don’t make it usable, you’re throwing away your entire investment,” says Temkin. AT&T’s CIO Arroyo agrees customers want technology to work immediately and without instructions. “You don’t want surprises.”

5 HAPPY CUSTOMERS MAY BE YOUR ROI. Customer loyalty is the ultimate goal of CX strategies, but it’s also one of the toughest to achieve, says Temkin. CIOs have to get the executive team on board before making a significant CX investment. “The biggest challenge is getting the organization to make trade-offs between short-term financial goals and long-term customer-loyalty goals,” Temkin says. Arroyo says the investment has been worth it at AT&T. “Customer satisfaction has improved across the board,” he says. “We’ve even exceeded expectations, to be more effective [at] selling.”

—Lauren Brousell

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Gambling on Startups

Partnering with no-name vendors can lead to a big payoff or a total bust

BY STEPHANIE OVERBY

Several years ago, Rob Duchscher took a chance by signing a contract with a startup vendor of test automation software. Duchscher, now the CIO of Starkey Industries, the largest hearing-aid manufacturer in the United States, did his due diligence. The financials were in order, the company's leaders had a track record of success, and the startup's technology blew the competition away.

A few years in, the company was shut down. And Duchscher was left to pick up the pieces.

"At that point," says Duchscher, "I was hosed."

It wasn't the first time Duchscher got burned placing a bet on a young vendor. Some were bought. Others went bankrupt.

And it probably won't be the last. Unlike some IT leaders, Duchscher doesn't like to play it safe with vendor selection. "A lot of my peers are too risk-averse. They want to make the absolute safest choice," says Duchscher, who was vice president of software engineering and a research and development program manager before taking over IT. "Safe choices lead to a culture of status quo. And status quo, especially today, can make it hard to survive and remain profitable."

Increasingly, IT leaders, frustrated with traditional suppliers, are seeing the appeal of startup partnerships. "The desire for lower risk pushed a lot of CIOs toward the bigger

A man with short brown hair, wearing a light blue button-down shirt under a brown tweed blazer and khaki trousers, is sitting on a large, dark tree trunk. He is looking towards the camera with a slight smile. The background is a dense forest with green foliage and sunlight filtering through the trees.

Rob Duchscher, CIO at Starkey Industries, has been burned by a few start-ups, but he doesn't like to play it too safe with vendor selection because it leads to a "culture of status quo."

players with deeper pockets and more money for R&D. But they gave up one risk for another," says Christine Ferrusi Ross, research director at Forrester. "They traded the risk that a smaller, newer vendor would somehow fail for the risk that they would be held hostage to a supplier with whom they have no leverage."

It's not just increased influence that draws IT leaders to nascent suppliers. Startups are more flexible with pricing terms and product features. Their contracts take weeks to negotiate rather than months; implementations take months rather than years. Most importantly, they are answering the technology questions that older vendors won't even ask.

"Small, startup companies are the primary drivers of innovation within the IT industry," says Mark Settle, CIO of \$2.2 billion BMC Software. "A lot of startups are not only solving the newest problems out there," adds Ben Haines, CIO of Pabst Brewing, "they're solving them at a faster rate."

But working with startup vendors is complicated. They lack the processes and customer support frameworks of their more-established counterparts. Their rollouts and updates require extra oversight. And the CIOs that partner with them have to do a lot of hand-holding throughout the relationship.

"It takes time and direct involvement. But if you're truly getting a unique value proposition that you can't get elsewhere, you have to be willing to invest in this stuff," says Tracey Rothenberger, CIO of Ricoh, the \$23 billion maker of copiers, supplies and document-management technology. "We're not [working with startups] for parts of the business that are small or insignificant. We're doing this with vendors that will have the ability to truly be transformative for us."

The Upside of Startups

"Startups are a good way to experiment at the edges of your priorities and position your company as an innovator," says William Hsu, co-founder of startup accelerator MuckerLabs.

But a carefully selected startup operating at the core of the business can make an even bigger bang, as Rothenberger found out. "We're trying to get an advantage for our business by moving into progressive technology much faster," he says.

Nine years ago, Rothenberger needed a mobile solution for Ricoh's service force—something that would give it access to parts inventory, schematics and dispatched calls in the field. At the time, the market was ill-defined—many players and even more technologies. Rothenberger teamed up with a new vendor that had a handful of employees. "They had some incredibly good technology, and it gave us a good couple of years with that solution before our competitors had it," Rothenberger explains. "We did it because it was pivotal to our business."

Increased responsiveness and influence over product design are also among the perks of working with a budding vendor. Clorox CIO Ralph Loura works with startups when he's looking for what he calls "systems of engagement"—those tools that take a new, often social approach to a business problem. Young vendors are noticeably more nimble and responsive to his needs as a customer. When Loura asked one startup partner for integration support for a legacy platform, the company got to work immediately. "In an established vendor, it may take 18 to 24

10

Questions for a Startup Vendor

Using a little-known tech supplier can produce big benefits, but it requires doing your homework

1. What is your source of operating capital, and how long can you operate at current revenue levels?
2. Who are your advisers?
3. Do you have a product in production?
4. Who are your key employees, and how will you retain them?
5. What aspect of your product cannot easily be reproduced by competitors?
6. What percentage of your users are paying customers?
7. What is your product road map, and how often has it changed?
8. How much are you spending on security and compliance?
9. How many recurring contracts do you have (versus month-to-month subscriptions)?
10. What is your exit strategy?

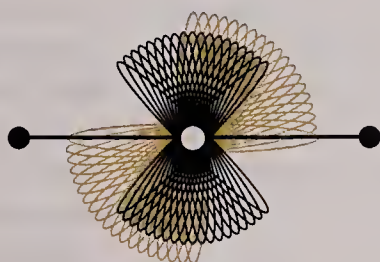
—S.O.

months to make such a request, have it filtered from the field through product management, have it approved for the product road map, and make it into a release," says Loura. "This startup vendor was able to accomplish the same in under four months. [It's] a much flatter organization and the focus is more on being agile than on product lifecycle management."

Duchscher likes the attentiveness. "When you're working with one of the behemoths, you might get a quarterly visit or someone asking you at the end of the fiscal year what they can do for you. That drives me crazy," he says. "With a startup, there's a much tighter interaction. You know the engineers and the owners, and they're actively involved in how things are going."

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Tracey Rothenberger, CIO of Ricoh, says using a well-vetted startup's technology in a core area of the business can produce a dramatic competitive advantage.

And, of course, the price is right. If you're an inaugural customer, you may even score freemium rates. "A lot of them don't know how to price their products. One founder asked me if he was charging too little," says Haines of Pabst Brewing. "I had to say, 'Yes. But I like it.' I want it as cheap as possible. If I'm in early, I get that benefit."

Where the Startups Are

CIOs can find viable startup vendors everywhere. Peer networks. Industry forums. Analyst reports. Google searches. "Any CIO that is trying to develop competitive advantage for his or her business through the use of information technology really needs a mechanism for continually scanning the landscape of tech startup companies," says BMC's Settle. Ideally, IT leaders want to get involved "as the [technology] trend is developing, but before the market consolidation happens," says Rothenberger of Ricoh.

One of the best avenues for finding newer, niche players is venture capital firms. Many specialize in a specific type of technology—cloud, mobile, collaboration—so it's relatively easy to identify potential partners.

More important than uncovering the newest player in a market, though, is finding the right one.

Compellent Technologies actually reached out to Duchscher about its new disk array products as he was researching offerings from traditional providers like IBM and EMC. "They were a small shop, and there was concern here at the top that they might not make it," says Duchscher, particularly given that this would be a multimillion-dollar investment and not a sideline experiment. Duchscher did what he always does—get inside the company.

"I like to go onsite and really get to know them," he says. They had a solid, intelligent disk array at a time when others didn't. Funding was robust. The leaders had strong back-

Cloud-based Communications Making Inroads

Market
Pulse

IN A WORLD WHERE EFFICIENCIES AND COST CONTROL ARE AN ONGOING REALITY, THE CLOUD AS-A-SERVICE MODEL IS HERE TO STAY. NEW RESEARCH FROM IDG RESEARCH SERVICES VALIDATES THE MOVEMENT WITHIN THE BUSINESS COMMUNICATIONS SECTOR WITH YEAR-TO-YEAR RESULTS SHOWING SIGNIFICANT, STEADY GROWTH.

According to a recent IDG Research Services survey, the trend toward deploying business communications applications in the cloud continues to gain traction with active deployments at 30 percent in 2012—a considerable increase from just 20 percent in 2011. In addition, survey responses signal anticipated growth in communications-as-a-service to 43 percent over the next three years.

When asked about anticipated benefits, respondents with active cloud-based communications deployments cite lower total cost of ownership (TCO) as both the most sought after and realized benefit. Of those with active deployments, 47 percent experience a lower TCO, compared with just 19 percent who felt costs have risen.

Although not the only driver, minimizing capital expenditures is understandably a key component of what is driving cloud communications adoption. And, the fact that cloud deployments by design do not require significant upfront investments helps set the stage for a purchasing model that works well for many organizations, explains Joe Staples, CMO at Interactive Intelligence, an Indianapolis-based global provider of contact-center automation, unified communications and business process automation software and services.

"Beyond the cost equation, embracing a cloud approach also allows for new levels of flexibility and scalability. For instance, the ability to increase or decrease user counts as business needs fluctuate over time is much easier to do in a cloud environment—not an easy process with on-premise solutions," he says. "Taking an as-a-service approach means only paying for the software services you need rather than investing in

technology that may not be necessary down the road."

According to respondents, other key benefits experienced through embracing the cloud include faster deployment times, reduced IT requirements, and quicker access to new features and functionality.

These benefits can yield significant rewards, explains Staples. "For instance, as businesses look for a competitive edge, they are always seeking ways to get things done quicker without compromising functionality," he says. "The ability to deploy software in the cloud can be done much faster than is possible with on-premise deployments. Plus reduced IT requirements allow the organization to focus on its core business rather than on the technology behind the business."

» "The fact that cloud deployments by design do not require significant upfront investments helps set the stage for a purchasing model that works well for many organizations."

Staples concludes, "What the IDG Research Services shows is a definite shift in the market toward consuming business communications in the cloud. Moreover, that this move is driven by the very real and tangible benefits organizations are finding around improved efficiencies, reduced costs and faster access to the latest communications solutions." ■

grounds. And they were 25 percent cheaper than other options.

In many ways, running a background check on a new market entrant is similar to traditional vendor due diligence. "The categories are the same," says Forrester's Ross. "But the definitions are different." Financial viability is always important, for example. But if you judged startups on profitability, you'd rule out 90 percent of them, Ross notes.

"A lot of what we do with established solutions is filter. We have a need. We [find] five or six established solutions in that space and try and eliminate choices," says Loura of Clorox. "This logic needs to be inverted for startups. The question shouldn't be, 'Can I filter them out?' It should be, 'Can I convince myself that they could close the gaps?'"

Those gaps tend to come in three categories: financial, technical and foundational.

CIOs often have certain metrics or guidelines for assessing financial viability. Who is funding them? Are more than half of their users paying customers? How many recurring contracts do they have? How much cash flow is there? "I can't sign up with two cash-strapped guys in a garage," says Rothenberger.

When Haines was looking for a file-sharing tool in his previous role as director of architecture of Red Bull North America, he considered using Dropbox but backed out when he realized there would be no enterprise support. Then he found Box. They had well-known backers. They'd brought in some enterprise heavyweights. He hired them at Red Bull and has since deployed their technology at Pabst.

The technology check is often more rigorous because "there is relatively little third-party validation out there that [a startup] product can deliver," says Nick Gaunt, CIO of the

tial integration or development and is hard to decommission once deployed, then we'd have a greater concern," he says. Solid-state disk storage is less risky, for example, because one could easily migrate back to spinning disks. A new business intelligence and analytics tool is a harder sell. "The investment in end user training, data integration and report building would be significant and not easy to port to a different platform," Loura says. "So we would do more work to become comfortable with the solution."

Then there's the foundation: the business plan, the talent, the leadership. Gaunt of the NHS looks for entrepreneurial veterans with a history of commercial success. "We were thinking about getting involved with a company where the chief technologist was incredibly bright. But he wasn't a good business person," says Rothenberger, who ultimately chose not to work with the company. "They had the superior product, but he had a stranglehold on all the decisions."

Once the Ink Is Dry

One of the biggest issues for IT leaders who bring in these niche suppliers is integration. "It's tough," admits Haines. "You have to make sure your staff is trained in all the different APIs and platforms out there."

Vendor management headaches also increase. "Most aren't very good at managing their vendors anyway, so governance becomes a huge problem," says Forrester's Ross. "You need to parcel the responsibility out to the person who works closely with the niche supplier but also make sure everyone knows how to do vendor management."

Customer service can often be an issue. "Startups don't have a lot of processes in place, and they haven't worked with 1,000 customers," says Hsu of MuckerLabs, who founded BuildPoint, a construction bidding system, at the age of 23. "Support and issue resolution from post-sale to implementation is something you have to work out before the contracts are signed."

Startup employees are often playing multiple roles: product development, project implementation, customer support. "On the plus side, the startup organization is far less bureaucratic," says Settle of BMC. "On the negative side, those same technical resources may already be dedicated to support another customer or to get the next product release out the door, and access to those individuals may be walled off altogether."

If you're a Fortune 500 company used to working with big vendors, you're accustomed to strong vendor account management. "Smaller players have focused so much on their product that that is something they haven't developed yet," Ross says. "The relationship management pieces aren't there." The customer has to take the reins and set expectations for communication.

While the speed of startup rollouts and updates can be a boon, they also require more technical oversight. "We allocate more testing time to the releases," says Rothenberger. "Smaller vendors have fewer controls, so more issues pop up."

There can also be internal resistance in IT to the startup partnership. "The ultimate paradox in most IT shops is that the staff complains that they spend all their time maintaining legacy technologies and that there's no innovation going on," says Settle of BMC. "But when efforts are made to evaluate or

"We're trying to get an **advantage** for our business by moving into **progressive technology** much faster."

—Tracey Rothenberger, CIO, Ricoh

Institute for Innovation and Improvement at the U.K.'s National Health Service (NHS). Rothenberger spends the most time on the technology evaluation. "You may find they have a fantastic concept but it's not mature enough for your organization," he says. Big red flags include a system in perpetual beta or a product road map that shifts with the wind.

Loura looks for portability. "If a solution requires substan-

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Rethink Possible



prototype new startup products, everyone complains that they already have too much work to do.”

CIOs always talk about vendor engagements as partnerships, but that’s often just lip service. When working with a startup, partnerships are a requirement.

“You can’t just make the purchase and go away. It’s not like working with Microsoft or Oracle, where you ultimately get a product that works, with a few bugs here and there,” says Duchscher. With startups, “things are fluid, decisions are made quickly, and you need to stay on top of that.”

At Pabst, Haines is working with some very early stage players—a data integration company that hasn’t even entered Round A funding and an enterprise performance management provider going into general release sometime this fall. “It becomes a mini external R&D group for us,” Haines explains. “They’re giving us a lot, and we’re there on the ground level helping them to shape the products.”

Ricoh’s Rothenberger has even talked to venture capital firms on behalf of three of his startup partners. “It’s another more intimate way to get engaged. We get into discussions about where they’re going for the next rounds of funding, their last six months of financials, strategies to take the company public or sell,” he says. “Initially, you’re just buying into the technology. But as the relationship evolves, you want to see the company succeed.”

But too much guidance from—or customization for—a specific customer can handicap a startup. “My role is not to push them, but to act as mentor,” Rothenberger says. “I’m hiring these guys because their product is unique. If I knew how to build it better than them, I would have done it myself.”

The End Game

Startups aren’t startups forever.

Loura at Clorox knows a CIO whose entire enterprise is now being run by a major ERP player even though he didn’t buy a single piece of software directly from them. The big ERP vendor had acquired the smaller companies he was working with.

It happens. A lot. Loura has seen collaboration tools, social listening platforms, systems monitoring solutions, and more snapped up by legacy vendors or competitors. “Sometimes it’s business as usual, but often the acquirer will make changes to the prior road map or strategy,” he says.

At Pabst, Haines is waiting to see how Microsoft’s acquisition of Yammer works out for him in the long run. “I’m a little nervous,” Haines admits. “I’ve talked to them, and they’ve been open about Yammer remaining separate, which is good.”

Contingency plans are key, starting with securing source code escrow and forensic toolkits in the contract. Even the big vendors can discontinue support for their own products. “It’s just as easy for an IBM to make a SKU disappear,” says Haines.

At Starkey, that source code and forensic toolkit enabled Duchscher to continue to use the test automation software that was shut down—for a time. “But the life of that product had ended. No more fixes, no more enhancements,” Duchscher says. “You can live that way for a while, but eventually if the vendor is not moving their product forward, that impacts your ability to move your product forward.”



“[The startup] becomes a mini external R&D group for us.”

—Ben Haines, CIO, Pabst Brewing

Today, Duchscher is dealing with the aftermath of Compellent’s sale to Dell. “We’re not seeing the level of responsiveness that we saw when it was just Compellent,” he says. “I’m happy for the people of Compellent, but it was not the best move for Starkey. When I had a real problem before, I could pick up the phone and call the president for immediate action. I don’t have Michael Dell’s number.”

There’s also some risk in startup success. “These startups can become big players themselves—not necessarily becoming behemoths, but really owning their space,” says Ross of Forrester. “And the vendors can start to take on the characteristics [that CIOs] were trying to avoid in the first place.”

Then there are the startup failures. “I’ve been involved in a couple, and they’re always tragic,” says Rothenberger. “It’s never about the technical aspects of the product. Those things can be fixed. It always comes down to the human element—individuals who make poor decisions or don’t communicate well and end up creating a big mess.”

Working with startup vendors isn’t for everyone. Joe Fuller once started his own a point-of-sale software company for specialty retailers. His employer, Dominion Enterprises, has invested in a startup accelerator program called Hatch. And Fuller has served as judge for Start Norfolk, startup event and competition in Virginia. Yet as CIO of Dominion Enterprises, he doesn’t purchase any products or services from startups.

“We are typically dealing with large vendors for our expensive services and products such as disk storage and Internet connectivity,” Fuller explains. “These are capital-intensive businesses that small startups really can’t compete with.”

Fuller wouldn’t rule it out entirely. But, he says, “Most startups...are under-capitalized and they can’t survive any setbacks. As CIO, I can’t afford to go with an innovative company that offers a neat product at a great price if I’m afraid they will go out of business.” **CIO**

Stephanie Overby is a freelance writer based in Massachusetts.

NOTICE

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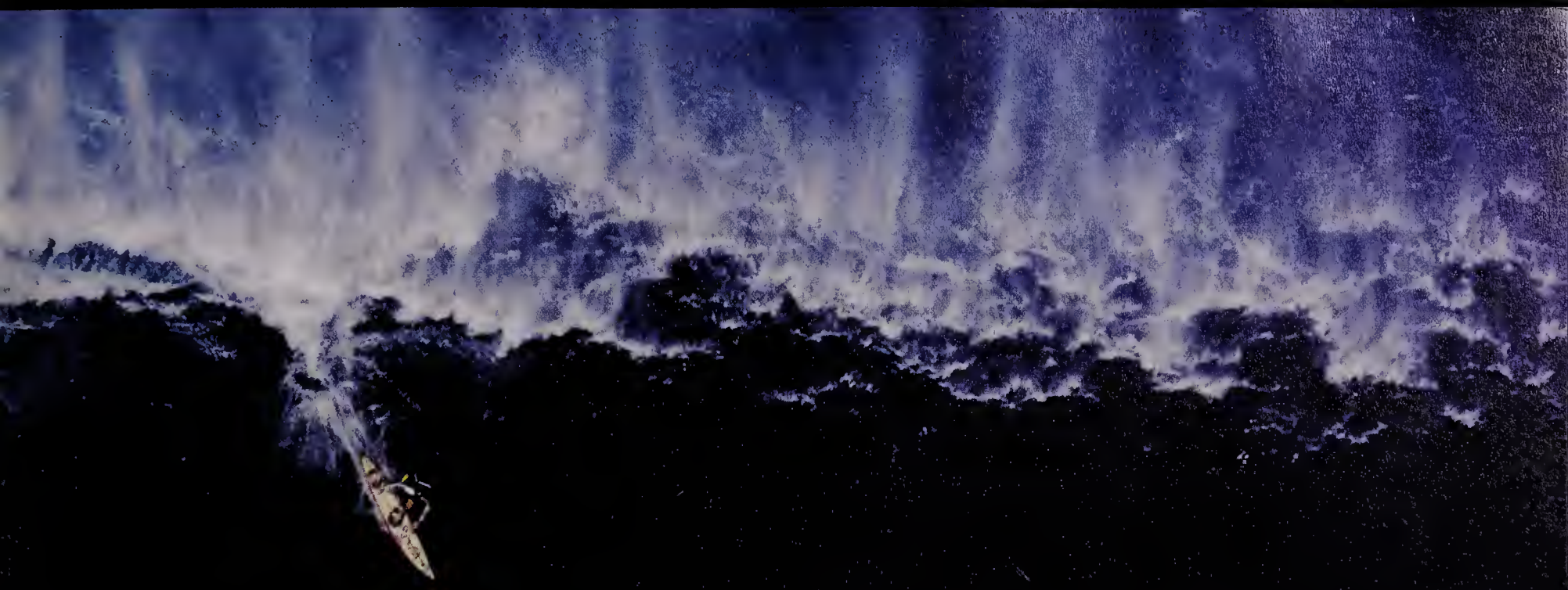
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Peak Performance

"There was a massive change between [London] and Beijing" because of the growth of social media, Internet usage and mobile devices, says Howard Dickel, telecom provider BT's director of delivery for the 2012 Olympic Games. Dickel was in charge of installing the communications infrastructure for the "most-connected games ever," and he wanted what he built to be sustainable. So when BT started planning its data communications eight years ago, it decided that instead of the four integrated networks used at the Beijing Olympics, London would use a single network and host services like telephony and cybersecurity in the cloud. "If we built it from scratch, it would be a one-time solution," Dickel says. BT hooked up a total of 80,000 connections, 16,500 phone lines and 14,000 cable TV outlets at 94 locations. "There are wide area networks and fiber that will stay in place at venues and become a part of BT's network," Dickel says. The company also kept the nearly 350 business processes it developed for the games. *-Lauren Brousell*

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